

filed April 17, 1998; which claims priority to U.S. Provisional Application Serial No. 60/078,765, filed March 19, 1998.

IN THE CLAIMS

Please cancel Claims 4, 5, 7, 9, 15, 20, 22, 24, 28-36 without prejudice or disclaimer of the subject matter therein.

Please amend Claims as follows:

1. (Once amended) An isolated nucleic acid molecule selected from the group consisting of: a nucleic acid molecule having a nucleic acid sequence that is at least about 80 percent identical to a nucleic acid sequence selected from the group consisting of SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:25, SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:32, SEQ ID NO:33, SEQ ID NO:35, or a fragment thereof having at least about 12 nucleotides.
2. (Once amended) An isolated nucleic acid molecule selected from the group consisting of:
- (a) a nucleic acid molecule having a nucleic acid sequence encoding a B7 protein selected from the group consisting of: (i) a protein having an amino acid sequence that is at least about 60 percent identical to the amino acid sequence SEQ ID NO:7, (ii) a protein comprising an epitope of said protein having an amino acid sequence that is at least about 60 percent identical to the amino acid sequence SEQ ID NO:7, (iii) a protein having an amino acid sequence that is at least about 60 percent identical to the amino acid sequence SEQ ID NO:17, (iv) a protein comprising an epitope of said protein having an amino acid sequence that is at least about 60 percent identical to the amino acid sequence SEQ ID NO:17, (v) a protein having an amino acid sequence that is at least about 60 percent identical to the amino acid sequence SEQ ID NO:26, (vi) a protein comprising an epitope of said protein having an amino acid sequence that is at least about 60 percent identical to the amino acid sequence SEQ ID NO:26, (vii) a protein having an amino acid sequence that is at least about 80 percent identical to the amino acid sequence SEQ ID NO:34, and (viii) a protein comprising

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an epitope of said protein having an amino acid sequence that is at least about 80 percent identical to the amino acid sequence SEQ ID NO:34; and

- (b) a nucleic acid molecule comprising a complement of any of said nucleic acid sequences set forth in (a).

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3. (Reiterated) An isolated nucleic acid molecule selected from the group consisting of a nucleic acid molecule that encodes a naturally-occurring soluble mammalian B7-2 protein and a nucleic acid molecule comprising a complement of said nucleic acid molecule that encodes said protein.

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6. (Once amended) A therapeutic composition that, when administered to an animal, regulates T cell mediated immune responses in said animal, said therapeutic composition comprising an isolated nucleic acid molecule selected from the group consisting of: a nucleic acid molecule having a nucleic acid sequence that is at least about 80 percent identical to a nucleic acid sequence selected from the group consisting of SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:25, SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:32, SEQ ID NO:33, and SEQ ID NO:35.

8. (Once amended) A method to produce a B7 protein, said method comprising culturing a cell capable of expressing said protein, said protein being encoded by a nucleic acid molecule selected from the group consisting of:

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- (a) a nucleic acid molecule having a nucleic acid sequence that is at least about 80 percent identical to a nucleic acid sequence selected from the group consisting of SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:25, SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:32, SEQ ID NO:33, SEQ ID NO:35, and a fragment thereof having at least about 18 nucleotides, wherein said fragment encodes an epitope; and
- (b) a nucleic acid molecule that encodes a naturally-occurring soluble mammalian B7 protein.

10. (Once amended) The invention of Claims 1,2, 6 or 8, wherein said nucleic acid molecule comprises a nucleic acid sequence that encodes a B7 protein.

11. (Once amended) The invention of Claims 1,2, 6 or 8, wherein said nucleic acid molecule encodes a protein that elicits an immune response against a naturally-occurring B7 protein.

12. (Once amended) The invention of Claims 1,2, 6 or 8, wherein said nucleic acid molecule is selected from the group consisting of: a nucleic acid molecule comprising a nucleic acid molecule selected from the group consisting of nCaB7-2₁₈₉₇, nCaB7-2₉₈₇, nCaB7-2_{s1795}, nCaB7-2_{s840}, nFeB7-2₂₈₃₀, nFeB7-2₉₉₆, nCaB7-2₉₂₁, nCaB7-2_{s774}, nFeB7-2₉₁₈, nFeB7-2_{s509}, nFeB7-2_{s359}.

13. (Once amended) The invention of Claims 1,2, 6 or 8, wherein said nucleic acid molecule is selected from the group consisting of:

- (a) a nucleic acid molecule comprising a nucleic acid sequence that encodes a protein having an amino acid sequence selected from the group consisting of SEQ ID NO:7, SEQ ID NO:17, SEQ ID NO:26, SEQ ID NO:31 and SEQ ID NO:34; and
- (b) a nucleic acid molecule comprising an allelic variant of a nucleic acid molecule encoding a protein having an amino acid sequence selected from the group consisting of SEQ ID NO:7, SEQ ID NO:17, SEQ ID NO:26, SEQ ID NO:31 and SEQ ID NO:34.

14. (Once amended) The invention of Claims 1,2, 6 or 8, wherein said nucleic acid molecule is selected from the group consisting of:

- (a) a nucleic acid molecule comprising a nucleic acid sequence selected from the group consisting of SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:25, SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:32, SEQ ID NO:33, and SEQ ID NO:35; and
- (b) a nucleic acid molecule comprising an allelic variant of a nucleic acid molecule comprising any of said nucleic acid sequences.

16. (Once amended) The invention of Claims 1-3, 6 or 8, wherein said nucleic acid molecule comprises an oligonucleotide.

17. (Once amended) A recombinant molecule comprising a nucleic acid molecule as set forth in Claims 1-3, 6 or 8, operatively linked to a transcription control sequence.

18. (Once amended) A recombinant virus comprising a nucleic acid molecule as set forth in Claims 1-3, 6 or 8.

19. (Once amended) A recombinant cell comprising a nucleic acid molecule as set forth in Claims 1-3, 6 or 8.

21. (Once amended) The nucleic acid molecule of Claim 3, wherein said nucleic acid molecule comprises a nucleic acid sequence encoding a naturally-occurring soluble B7-2 protein having extracellular and intracellular domains but lacking at least a portion of a transmembrane domain sufficient to produce a soluble protein upon translation of said nucleic acid molecule in a suitable host cell.

23. (Once amended) The nucleic acid molecule of Claim 3, wherein said naturally-occurring soluble mammalian B7-2 protein is capable of binding to a protein selected from the group consisting of CD28 and CTLA4.

25. (Once amended) The nucleic acid molecule of Claim 3, wherein said naturally-occurring soluble mammalian B7-2 protein is capable of delivering a co-stimulatory signal to a helper T cell sufficient to stimulate cytokine secretion by said helper T cell.

26. (Once amended) The nucleic acid molecule of Claim 1-3, 6 or 8, wherein said nucleic acid molecule is selected from the group consisting of a canine nucleic acid molecule and a feline nucleic acid molecule.

27. (Once amended) The invention of Claim 6, wherein said protein, when administered to an animal, elicits an immune response against a B7-2 protein.